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EXAMINER	
COLUCCI, MICHAEL C	
ART UNIT	**PAPER NUMBER**
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/679,556	RAMSEY, WILLIAM D.	
	Examiner	**Art Unit**	
	Michael C. Colucci	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) 1-31 is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date 1/18/2005,10/4/2006.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-14, 18-26, and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Su Keh-Yih et al et al, US 5,418,717.

Re claim 1, Su Keh-Yih et al discloses a method of identifying a semantic structure from a text, the method comprising:

identifying semantic entities from the text;

combining semantic entities to form at least two candidate semantic structures;

generating a semantic score for each candidate semantic structure based on the likelihood of the semantic structures;

(Su Keh-Yih et al discloses the selection of the top-1 and top-2 scoring candidates for processing more robust sentences with less variation of the input sentence in reference to the library to reduce erroneous analyses in a timely manner. Col. 9 line 66 – Col. 10 line 6, Col. 17 lines 4-21, and Col. 2 lines 37-45)

generating a syntactic score for each candidate semantic structure based in part on the position of a word in the text and the position in the semantic structure of a semantic entity formed from the word; and

(Su Keh-Yih et al discloses scoring based on the syntax of a sentence. The syntax of a sentence is the pattern and relationship of words that govern the arrangement or structure of a sentence. The position of a word within a sentence determines the syntax. Su Keh-Yih et al discloses the probability of a sentence having a particular semantic annotation and syntactic structure. Col. 10 lines 38-52)

combining the syntactic score and the semantic score for each semantic structure to select one of the candidate semantic structures for at least a portion of the text.

(*Su Keh-Yih et al discloses the combining of syntactic and semantic scores for a particular structure. Su Keh-Yih et al discloses the selection of a preferred structure in reference to the combination of syntactic and semantic scores. Col. 19 lines 56 - Col. 20 line 4 and Col. 20 lines 10-17*)

Re claim 2, the method of claim 1 wherein generating a syntactic score comprises for each parent-child relationship between semantic entities in a candidate semantic structure, identifying a token position of a word associated with a parent semantic entity and identifying a token position of a word associated with a child semantic entity and determining probability based on the token positions. (*Su Keh-Yih et al discloses the parent child relationship among constituents. Su Keh-Yih et al also discloses the identification of tokens within sentences. Su Keh-Yih et al discloses locating tokens and extracting information about the token(s) in reference to a lexicon or dictionary. Col. 5 lines 58-68 and Col. 21 lines 4-10*)

Re claim 3, the method of claim 1 further comprising generating a transition score based on the order in which semantic entities identified from the text are aligned with the text. *(A transition score in light of the specification refers to a Markov score, which is the way that entities are ordered within a text. Markov/transition scores deal with probability and order of entities. Su Keh-Yih et al discloses this same score by referring to it as "semantic score probability". Col. 21 lines 40-49)*

Re claim 4, the method of claim 3 wherein generating a transition score comprises generating a separate transition probability for each pair of semantic entities that appear on a same level in a candidate semantic structure. (*Su Keh-Yih et al discloses the use of "syntactic score probabilities" applied to different phrase levels within a syntax tree.* Col. 22 lines 47-52)

Re claim 5, the method of claim 1 wherein using semantic entities to form a candidate semantic structure comprises including semantic entities in the candidate semantic structure that are not identified from the text. *(Su Keh-Yih et al discloses the use of semantic feature information obtained from a dictionary, where the dictionary is not part of the input text. Col. 18 lines 50-61)*

Re claim 6, the method of claim 5 wherein generating a semantic score comprises using a penalty factor to discount a probability of a semantic entity if the semantic entity was not identified from the text. *(Su Keh-Yih et al discloses that a score or scores can be reduced if there is variation between input sentences and the master text.* Col. 16 line 63 – Col. 17 line 3 and Col. 14 lines 16-32)

Re claim 7, the method of claim 1 wherein identifying semantic entities comprises using a schema in which text is associated with semantic entities. *(A schema relative to linguistics is a collection and organization of data and syntax that is used for the processing of input(s) from input text. Su Keh-Yih et al also distinctly discloses a "design schema" that can be updated for the improvement of a system. Col. 18 lines 50-61 and Col. 11 lines 33-39)*

Re claim 8, the method of claim 7 wherein a single word is associated with multiple semantic entities in the schema. *(Su Keh-Yih et al discloses breaking an input sentence into individual word portions. The individual words are compared to strings composed of parts of speech from a "lexical word storage". A lexical word storage can be construed as a grammar database, dictionary, etc. Col. 3 lines 1-10)*

Re claim 9, the method of claim 7 wherein using semantic entities to form a semantic structure comprises basing the semantic structure on relationships between semantic entities that are defined in a schema. *(Lexicon by definition is a dictionary and in some circumstances is more advanced than a dictionary. A relationship will be inherent between input text and the comparing structures. Fig. 103, Col. 6 lines 1-14, and Col. 3 lines 1-10)*

Re claim 10, the method of claim 9 wherein the schema that defines the relationships between semantic entities and the schema that associates text with semantic entities is the same schema. *(When read in light of the specification, "associating text with semantic entities" is considered a form of "defining a relationship". See analysis for claims 8 and 9.)*

Re claim 11, The method of claim 9 wherein basing the semantic structure on relationships that are defined in a schema comprises:

constructing a table with an entry that is indexed by two semantic entities and that contains a set of semantic structures found in the schema, each semantic structure containing the two semantic entities used to index the entry;

searching the table using the two semantic entities to locate the set of semantic structures; and

forming a semantic structure for each semantic structure in the set of semantic structures.

(Su Keh-Yih et al discloses a "pragmatic table" storing "pivot words" which are paired together and define a semantic relationship. By referencing or indexing the different elements within a table, a pair or pairs of pivot words or semantic entities can be located for processing. Col. 3 lines 29-39)

Re claim 12, the method of claim 1 further comprising combining a selected semantic structure with a further semantic entity identified from the text to form an expanded semantic structure. *(When read in light of the specification, an expanded semantic structure is broad enough as to be construed as the concatenation of words to form a string originating from within the input or a pre-defined library.* Su Keh-Yih et al *discloses a string composed of parts of speech. It can also be construed as a further expanded syntax tree disclosed by Su Keh-Yih et al. Col. 9 lines 32-43 and Col. 2 lines 12-21)*

Re claim 13, the method of claim 12 further comprising generating a semantic score and a syntactic score for the expanded semantic structure. *(See analysis for claim 12. Since "expanded semantic structure" is not limited by the specification, the operation for the establishment as well as combination of semantic and syntactic scores was disclosed by Su Keh-Yih et al, see analysis for claim 1 as well.)*

Re claim 14, the method of claim 12 wherein combining a selected semantic structure with a further semantic entity comprises performing an ordered search comprising:

determining if the further semantic entity can be placed beneath any of the entities in the selected semantic structure;

determining if a head of the selected semantic structure can be placed beneath the further semantic entity; and

determining if there is a common ancestor entity that both the further semantic entity and the head of the selected semantic structure can be placed beneath.

(Su Keh-Yih et al discloses means for decomposing a syntax tree into substructures. Su Keh-Yih et al also discloses the context under which the substructure is constructed is established by computer processing means. When read in light of the specification, claim 14 is construed as sorting a string to determine the order of entities. This is broad enough to be defined as establishing context. When a string is broken into a tree of words, the string must be sorted to compare words to one another. An example of this

organization is through the use of a sorting algorithm such as a bubble sort. Col. 21 lines 11-15)

Re claim 18, the method of claim 1 further comprising pruning a candidate semantic structure from further consideration based on the syntactic score and the semantic score for the semantic structure. *(Su Keh-Yih et al discloses a system where truncation or disambiguation is initiated on the basis of the syntactic, semantic, and/or the lexical scores. This truncation is applicable to a nodal language construct representative of input material (i.e. speech, text). Col. 4 line 61 – Col. 5 line 14)*

Claim 19 has been analyzed and rejected with respect to claims 1 and 18. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 20 has been analyzed and rejected with respect to claim 7. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 21 has been analyzed and rejected with respect to claim 11. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 22 has been analyzed and rejected with respect to claim 11. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 23 has been analyzed and rejected with respect to claim 5. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 24 has been analyzed and rejected with respect to claim 6. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 25 has been analyzed and rejected with respect to claim 12. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 26 has been analyzed and rejected with respect to claim 14. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 29 has been analyzed and rejected with respect to claim 1. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 30 has been analyzed and rejected with respect to claim 1. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 31 has been analyzed and rejected with respect to claim 3. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 15-17 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Su Keh-Yih et al* as applied to claims 1 and 19 above and further in view of Boman et al 6,480,819.

Re claim 15, Su Keh-Yih et al discloses having the best semantic interpretation of a system which comprised lexical, syntactic, and semantic analysis of multiple elements within a string (Su Keh-Yih et al Col. 2 lines 12-25). However Su Keh-Yih et al fails to teach of deciphering between command and selected structure. Boman et al discloses a semantic analyzer which can distinguish whether the user's input is intended for description of program content or for meta-commands. Program content refers to user entered information such as speech which is converted to text. Therefore, the combined teaching of Su Keh-Yih et al and Boman et al would have rendered obvious utilization of a feature for distinguishing between command structure and selected input structure as claimed.

Re claim 16, Su Keh-Yih et al discloses having structures with substructures formed from syntax trees (Col. 21 lines 11-15). However Su Keh-Yih et al fails to teach of this method applied to the recognition of command structures. Boman et al discloses a command feature and semantic analyzer as discussed in claim 15 above. Therefore, the combined teaching of Su Keh-Yih et al and Boman et al would have rendered obvious utilization of a feature for placing the selected structures into command structure(s) as claimed.

Re claim 17, Su Keh-Yih et al discloses scoring and the selection of the best high scored candidate from the input. (Col. 9 line 66 – Col. 10 line 6, Col. 17 lines 4-21). Boman et al discloses a command feature and semantic analyzer as discussed in claim 15 above. Therefore, the combined teaching of Su Keh-Yih et al and Boman et al would have rendered obvious utilization of a feature for the selection of the best high scored command structure from the text as claimed.

Claim 27 has been analyzed and rejected with respect to claim 15. *Su Keh-Yih et al* discloses both the apparatus and method.

Claim 28 has been analyzed and rejected with respect to claims 16 and 17. *Su Keh-Yih et al* discloses both the apparatus and method.

Examiner's Note

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

CONTACT

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571)272-1847. The examiner can normally be reached on 7:30 am - 5:00 pm , alt. Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571)-272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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